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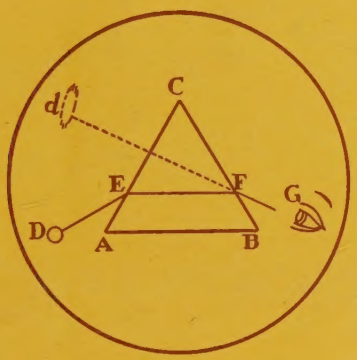


Volumes 54-63

1964-1973

# Cumulative Index

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# Optical Society of America

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## Volumes 54–63 1964–1973

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# Preface

This Cumulative Index was prepared by interfiling the annual Subject and Author Indices that appeared in the December issues of the years 1964 through 1973. If an abstract of a paper was presented at a Spring or Annual Meeting of the Society, an effort was made to include its volume and page numbers in the reference to the paper.

The names of all authors and co-authors of papers and Letters, and of book reviews, are included in the Author Index. Names of contributors and speakers at the Spring and Fall (Annual) Meetings of the Society are not included in the Author Index (unless the indexers learned that they had published their final papers in the *Journal* during the decade). All authors of abstracts that were published in the programs of the meetings (except post-deadline papers) are listed in the 20 Keys to Authors and Papers that are reproduced, facsimile from the programs, on pages 245 to 264. Those Keys should be searched, in addition to the Cumulative Author Index, to find everything that any author has had published in the *Journal* from 1964 through 1973.

The main headings in the Subject Index were evolved from those used in the Cumulative Indices for volumes 1—40 (published by the Society in 1952) and for volumes 41—53 (published in 1964). New subject headings, such as Lasers, Holography, Rockets, Ruby, Satellites, Scintillation, and Turbulence, were added as those subjects came into prominence. Some terms, such as Masers, that were used in the Annual Indices in the early years of the decade were replaced by more-customary terms (e.g., Lasers) that superseded them in common use before the end of the decade. References to those subjects that were published before the new subject headings were adopted in the annual indices have been added under the appropriate new headings in the cumulation. Subheadings were introduced to subdivide and provide closer analyses of heavily represented subjects. Subheadings are printed with light-face type, slightly indented, to distinguish them from the main headings, which are printed with bold-face type, with capital initial letters. The references are still-further indented.

A brief characterization of each paper, Letter, or book that was reviewed, or abstract of a paper that was read at a meeting of the Society, precedes the volume and page reference. That characterization was usually obtained by shortening the title. To facilitate fuller comprehension of the subject of each paper, Letter, or book review, facsimile reproductions of the 120 Tables of Contents are included on pages 143 to 172. Any reference to a seemingly interesting paper, Letter, or book review can easily be looked up in the appropriate Table of Contents, which gives the complete title and the names of all authors and co-authors. Thus it is not necessary to turn to the indicated page in the *Journal* to learn the complete title and the names of all authors. By subtraction of the listed page number from the first page number of the next title in the Table of Contents, the length of any paper or Letter can easily be determined.

The subject headings used in the Subject Index are listed below.

David L. MacAdam
Editor

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# Subject Index, Volumes 54–63 (1964–1973)

(1) Subjects, not titles, have been indexed. For names of authors, full titles and lengths of papers, Letters (indicated by L after page number), book reviews (R), and Technical Notes (TN), see Tables of Contents, reproduced on pages 143 to 172.

(2) References are arranged chronologically (by volume and page number) under each subject heading (or subheading) except Book Reviews, Necrologies, and Personalia, which are arranged alphabetically under those subject headings.

(3) Volume and page references to Abstracts (indicated by A) in programs of meetings of the Society are combined, on the same lines, in sequence of publication, with references to corresponding papers or Letters published in volumes 54 to 63 (when known to the indexers).

(4) Volume and page number of Errata (followed by E) are combined on the same lines following references to the corresponding papers or Letters.


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Gaston, Eugene A.—WD19
Geller, Joseph D.—WB11
Giuliani, John F.—FC16
Golay, Marcel J. E.—WD15
Golden, S. A.—FB21
Gorell, Richard L.—ThB15
Gryvnak, David A.—FB19

Habegger, M. A., and J. Lipp—FD19
Hall, Freeman F., Jr., and Lewis Larmore—ThB21
Hariharan, T. A.—ThB18
Harper, J. S.—WC24
Harris, Franklin S., Jr., and Frank L. Morse, Jr.—ThG11
Harris, James S.—ThC15
Hass, G.—FC22
Hass, G., and J. B. Ramsey—FC21
Hill, R. A.—FF14
Hilz, R., and C. R. Cavonius—ThD17
Hughes, E.—FF13
Humphreys, Curtis J., and Edward Paul, Jr.—FB11
Hunter, W. R., and S. A. Malo—ThF16

Jansson, Richard M.—WD17
Johnston, David R.—FB19
Jones, Alan L.—ThC19

Kaplan, Ehud—ThD18
Kattawar, George W.—ThG12
Kinney, Jo Ann S., S. M. Luria, and D. O. Weitzman—ThD14
Kirk, J. L.—ThF13
Klem, B. F.—ThB16
Klugman, E. H., and A. J. Montgomery—ThB14
Knestrick, G. L., J. A. Curcio, J. W. Tucker, and T. H. Cosden—ThB19
Koester, C. J., Clifford W. Ask, Sr., and J. D. de Veer—FD20
Kostkowski, Henry J.—WD18
Kwapisz, R. A.—FB13

Lahti, J. N.—ThC20
LaMacchia, J. T., F. S. Chen, and D. B. Fraser—WC16
Langenbeck, Peter—FD18
Larmore, Lewis—ThB21
Larsen, A. B.—WC18
Laun, Donald D.—FB12
Lavi, Abrahim—FD16
Lawton, Kenneth C.—ThC11
Lazar, Irving—FD13
Lee, Gilbert B.—ThD11
Lee, J. D.—ThC16
Leith, Emmett N.—WA1
Leonard, Carl—WC20
Levinson, John Z.—ThD16
Li, Tingye—FC12
Liétar, Christian M.—FF12
Lin, L. H., and H. L. Beauchamp—WC22
Lipp, J.—FD19
Lit, J. W. Y., and R. Tremblay—FD11
Lockwood, D. J.—FB18
Lohmann, Adolf—ThC13
Luria, S. M.—ThD14

MacQueen, R. M.—ThG13
Malila, William A., and Fred J. Thomson—WD13
Malo, S. A.—ThF16
Mankin, William G., and John Strong—WD14
Mann, M. M.—FC11
Markoff, Joseph L.—ThD18
Marom, E.—WC17
Massey, N. G.—WC14
Mastri, Vonell G.—ThD18
McLaughlin, S. C., M. J. DeSisto, and M. Breslaw—ThD19
Mitchell, Paul D.—ThB15
Montgomery, A. J.—ThB14
Montgomery, W. Duane—FD14
Morse, Frank L., Jr.—ThG11
Mueller, Peter F.—ThC18

Newton, A. M.—ThB12
Nimeroff, I.—ThD12
Nomarski, Georges E.—FD17

Ohlhaber, R. L.—FD21
Osantowski, J. F.—FC22

Palmer, C. Harvey—WB12
Pastor, Jose, James S. Harris, and George E. Evans—ThC15
Paul, Edward, Jr.—FB11
Pavlasek, T. J. F.—FD12
Pennington, K. S., R. V. Pole, and J. S. Harper—WC24
Pennington, K. S., and H. Wieder—ThC17
Peskin, James C.—FE1
Phelps, F. M., III, R. A. Kwapisz, and T. A. Anastasiou—FI
Plass, Gilbert N., and George W. Kattawar—ThG12
Pole, R. V.—WC24
Pollehn, Herbert, and Hans Roehrig—ThD15
Pontarelli, D. A.—FD21
Portigal, D. L.—WB15

Querry, Marvin—ThF11, ThF12

Rabin, Herbert—FC16
Radziemski, Leon J., Jr.—FB15
Ramsey, J. B.—FC21
Rao, K. Narahari, and Bruce D. Alpert—FB17
Reinheimer, C. J., and C. E. Wiswall—WC15
Renau, J.—FC17
Rice, D. K., M. M. Mann, and L. G. DeShazer—FC11
Richards, Whitman A.—ThD21
Roehrig, Hans—ThD15
Rowe, H. E., and Tingye Li—FC12

Sakai, Hajime—FB20
Sanderson, Robert L., and William Streifer—FC14
Saum, Kenneth, and William Benesch—FB16
Schachter, H.—FC13
Schmidt, E.—ThF19
Schmidt, E. D. D., J. L. Kirk, and K. Vedam—ThF13
Schmidt, Roger—WD17
Shankoff, T. A., and R. K. Curran—WC23
Shansky, Michael S.—ThD18
Sheridon, Nicholas K.—WC19
Sherman, George C., and Hans J. Bremermann—FD15
Shewell, J. R.—WC11
Silberg, P. A., and F. J. Corbett—FC15
Spencer, Domina Eberle, and Eugene A. Gaston—WD19
Sperling, George—ThD20
Stair, Ralph—WD20
Streifer, William—FC14
Strong, John—WD14
Sturr, Joseph F., Vonnell G. Mastri, Joseph I. Mark, Michael S. Shansky, and Ehud Kaplan—ThD18
Szeles, Donald M.—WD11

Thekaekara, Matthew P., and Ralph Stair—WD20
Thomson, Fred J.—WD13
Tischer, Frederick J.—WC13
Titterton, Paul J.—ThB11
Titus, J. S., Roger Schmidt, and Richard M. Jansson—WD
Toft, A. R.—FC22
Toth, Louis, and Stuart A. Collins, Jr.—ThC12
Tremblay, R.—FD11
Tucker, J. W.—ThB19

Upatnieks, Juris, and Carl Leonard—WC20

van Ligten, Raoul F., and Kenneth C. Lawton—ThC11
Vedam, K.—ThF13, ThF18
Vogl, Thomas P., and Abrahim Lavi—FD16
Vyce, J. Richard—WB13

Ward, John H.—FC19
Watson, Bruce F., Paul D. Mitchell, and Richard L. Gorell—ThB15
Weitzman, Donald O.—ThD14
Whitford, B. G., and T. J. F. Pavlasek—FD12
Wieder, H.—ThC17
Williams, Dudley, M. Querry, and B. Curnutte—ThF12
Williamson, A. E.—ThB17
Wiswall, C. E.—WC15
Wolf, Emil, and J. R. Shewell—WC11
Woods, W. William—ThF15
Worden, Earl F.—FB14
Work, E. A., Jr., and J. Braithwaite—WD12

Yokley, Charles R., and Henry J. Kostkowski—WD18
Yu, F. T. S.—WC12

no, Harris Y.—FF11
raz, E.—WH13
soff, Carl C.—WB21
erson, S. P.—FC14
erson, Wallace L.—TuC18
, Moses—WG18
strong, J. A.—FD1
thoon, R., and A. E. Siegman—TuC22
ley, E. J.—ThC12
ouanne, Marie-Jose—WI13
h D. C., W. G. Mayer, and W. J. Thaler—FE19

rash, Frank M.—ThH13
rd, K. M.—ThF14
ken, G. S., and J. A. Jordan, Jr.—WD21
lard, Stanley S.—FB19
nes, C. W.—ThB13
kett, J. R., and I. D. Liu—FC15
s, A. M., and J. S. Shirk—WJ17
or, Joyce E., and Frank W. Hoffman—FE15
cher, Jacob—FC19
nder, Max, and Anthony J. LaRocca—TuF13
nett, H. E., D. K. Burge, R. L. Peck, and J. M. Bennett—ThC11
nett, J. M.—ThC11
nett, J. M., J. L. Stanford, and E. J. Ashley—ThC12
an, M., and T. L. Ho—WH20
rgstein, L.—ThG17
reman, Dwight W.—WI16
enaky, Ellis, and John Mogey—TuE17
z, H. T., A. Weigandt, and C. Groom—ThG15
erman, Lucien M.—ThD17
bee, D. L.—ThC15
ck, J.—FF21
ivin, Albéric, and Jean-Marc Devin—WI18
istad, Jon O.—TuC20
nifacio, R.—FE12
adford, J. N., and R. C. Eckardt—FE18
andenberg, W. M., and J. P. Hennes—FC21
andt, Gerald B.—WG12
idges, J. M.—WJ12
ixner, Berlyn—FC12
omley, Keith, Michael A. Monahan, John F. Bryant, and Brian J. Thompson—ThB21
own, Gordon M.—TuC16
yan, Jon B., and Basil Curnutte—ThC16
yant, John F.—ThB21
yngdahl, Olof—ThB22
yngdahl, Olof, and Adolf Lohmann—TuC13, ThB11
ickner, Stanley—FB12
irckhardt, C. B.—WG21
irge, D. K.—ThC11
irkhardt, Dwight A.—FB14
irrer, Gordon J.—FF17
itton, Kenneth J.—WJ15

umpbell, F. W.—ThH11
rlson, F. P.—WG13, WH19
rpenter, R. H. S.—ThH11
asse, Yvan, A. K. Sen, Maurice Gravel, and M. Rouillard—WI19
nastang, Jean-Claude—ThG11
i, Chang Hwi, and H. Schachter—FE14
uang, Shih-Shung, and Hideya Gamo—ThF13
llins, D. G.—WC18
llins, S. A., Jr.—WI17
rnsweet, T. N.—ThH17
stich, Verne R.—ThG22
vey, Robert L., and Sumner P. Davis—ThG16
ane, H. D.—ThH17
onin, David J.—TuC21
onin, David J., and George O. Reynolds—ThD11
oenwhite, H. M.—WE14, WE22
rnutte, Basil—ThC16
strona, Louis J., Jr., and Whitman Richards—ThE20

vis, Sumner P.—WE15, WE20, WJ22, ThG16
Acetis, Louis A., and Irving Lazar—ThD13
gler, William H.—WJ21
itz, P. H.—WH13
ntino, M. J., and C. W. Barnes—ThB13
Shazer, L. G.—WE12
Shazer, L. G., and L. Huff—ThF15
vin, Jean-Marc—WI18
Witt, D. P.—ThC14
browolski, J. A.—ThG20
dge, M. J.—ThC20
ffy, Donald E.—WG15
nkelman, L., D. C. Evans, A. K. Stober, and R. Scolnik—ThD21
nlap, D.—WC14
ntley, Seibert Q.—TuA1, TuD11

ckardt, R. C.—FE18
derer, David L.—WJ11
dwards, T. H., Paul D. Wilson, and William H. Degler—WJ21
erhardt, James C., and Sumner P. Davis—WE15
chmann, George—FE13
nhorn, A.—ThC18
ruchi, R. G., and F. P. Carlson—WG13
ton, R. C.—FC17
y, R. L.—WJ20
stein, Gabriel L., and Sumner P. Davis—WE20
vans, D. C.—ThD21
vering, Frederick C., Jr., and Marie-Jose Aujouanne—WI13

airchild, David D.—FB11
alconi, Oscar—WD19, FF20
aulhaber, M. E.—TuF16
aulhaber, M. E., and P. G. Witherell—ThE14
ender, D. H., and A. J. St. Cyr—FB16
isher, K. J.—WE13
raenkel, Benjamin S.—WJ14
recaka, Sandor—ThD18
ried, D. L.—WH18
rieden, B. Roy—ThB12
riedman, Irwin—TuE16
unkhouser, Arthur T.—ThF16

ujimo, Hideya—ThF11, ThF13, ThG14
Garavaglia, Mario—ThG12

Gaylord, Heinz A.—ThH20
George, S., and R. A. Klingberg—WE19
Gestrin, Phyllis J., and Davida Y. Teller—ThE16
Giacchetti, Athos, R. W. Stanley, and Romuald Zalubas—WE17
Gieszelmann, E. L.—ThC21
Gignac, D.—FF18
Giles, John W., Jr.—ThB18
Gilmartin, Thomas J., and Floyd V. Schultz—WH12
Givens, M. Parker—WB16
Goebel, D. G., E. W. Poole, and R. G. Hartsock—TuF17
Goebel, David G.—FF15
Goodell, John B.—TuD19
Goodman, J. W., and W. T. Rhodes—WC17
Goorvitch, David—WJ14
Goorvitch, David, Francisco P. J. Valero, and Boris Ragent—WE18
Gordon, Jacqueline I., James L. Harris, Sr., and Seibert Q. Duntley—TuD11
Gordon, William R.—WD20
Grace, Robert E., Hideya Gamo—ThF11
Grassel, R. L.—ThF20
Gravel, Maurice—WI19
Gray, L. D., and R. A. Schorn—WJ18
Grimes, D. E., and Sumner P. Davis—WJ22
Groom, C.—ThG15
Gross, Leo—ThG18

Halajian, John D.—WC19
Hall, Freeman F., Jr., and Harris Y. Ageno—FF11
Hallock, Herbert B., and John D. Halajian—WC19
Hanes, G. R., and K. M. Baird—ThF14
Hansteen, Ralph W.—ThH16
Harger, Robert O.—WH16
Harper, J. S.—WB13
Harris, Charles S.—ThE18
Harris, James L., Sr.—TuD11, ThA1
Hartsock, R. G.—TuF17
Hass, G.—ThC13
Hennes, J. P.—FC21
Hernandez, Norman E.—WH16
Hickling, Robert—TuC12
Hilbert, R., and M. Rimmer—WD14
Hill, J. H., and J. D. Steinberg—ThH15
Hill, J. W.—ThH17
Hirsch, P. M.—ThB15
Ho, T. L.—WH20
Hoffman, Frank W.—FE15
Hoffman, Robert, and Leo Gross—ThG18
Holst, G. C., and E. Snitzer—ThF19
Holst, G. C., E. Snitzer, and R. Wallace—ThF18
Hoogland, Jan, and Irwin Friedman—TuE16
Hopper, F.—WC18
Horning, Wendell A.—WH15
Howard, I. P.—FB18
Howell, B. J.—TuE11
Howett, Gerald L.—ThE12
Hsia, Jack J. G., and D. P. DeWitt—ThC14
Huff, L.—ThF15
Hummer, Susanne—WG14
Humphreys, Curtis J.—WE16, WJ13
Hunter, W. R., G. Hass, and J. B. Ramsey—ThC13
Huppi, E. Ray—WC13
Hurlock, S. C., K. Narahari Rao, L. H. Jones, and R. M. Potter—WJ19

Ishimaru, Akira—WH14
Ivanoff, Alexandre—TuA2

Jacobs, Gerald H., and Robert L. Yolton—FB15
Jacobs, S. F., E. L. Gieszelmann, and H. E. Morrow—ThC21
Jacobson, Charles F.—TuC15, TuC16
Jerlov, N. G.—TuA3
Jones, A. E.—ThE17
Jones, Arthur E., David D. Fairchild, and Perry Spyropoulos—FB11
Jones, L. H.—WJ19
Jordon, J. A., Jr.—WD21, ThB15
Jorgensen, David W.—ThB17
Juleszy, B., D. Slepian, and M. M. Sondhi—WD12

Kampa, Elizabeth M.—TuD14
Kapash, R., and L. Bergstein—ThG17
Kattawar, George W.—WC21
Kattawar, George W., and Gilbert N. Plass—WC20
Kaufman, Victor, and Curtis J. Humphreys—WE16
Keister, M. P., Jr.—WH18
Kelleher, D. E.—WJ12
Kelly, D. H., H. D. Crane, J. W. Hill, and T. N. Cornsweet—ThH17
Kenyon, Bruce A.—FC18
Kermisch, Dorian—WG17
Kerr, Larry G.—ThH13
King, Marvin—WG18
King, W. B.—TuE12
Klein, Lothar—WJ16
Klein, Roland F.—TuD12
Kline, John V., Prince E. Rouse, and Berlyn Brixner—FC12
Klingberg, R. A.—WE19
Kneissl, Gerhart J.—FF14
Kohn, A. N.—TuF15
Kollodge, Jerome C.—FF13
Kornblith, R. L.—WJ12
Kozma, Adam—WB12
Krauskopf, J.—ThE19
Kuizenga, Dirk J., and A. E. Siegman—ThF21
Kullenberg, G.—TuD15
Kurtz, Clark N., and William Streifer—WI21
Kyle, T. G.—WC11

Lahti, J. N.—WH17
LaMacchia, J. T.—WG20
LaMacchia, J. T., L. H. Lin, and C. B. Burckhardt—WG21
Lamberts, Robert L.—ThD12, ThD19
LaRocca, Anthony J.—TuF13
Larsen, A. B.—WG19
Latta, Milton R.—WH14
Lavi, Abrahim—TuE19
Lazar, Irving—ThD13
Legendre, Jacques—WI20
Leonard, Carl—WB14
Lesem, L. B., P. M. Hirsch, and J. A. Jordon, Jr.—ThB15
Levinson, J. Z., F. W. Campbell, and R. H. S. Carpenter—ThH11
Liberman, I., and R. L. Grassel—ThF20
Lin, L. H.—WG21
Liu, I. D.—FC15
Livingston, P. M., P. H. Deitz, and E. Alcaraz—WH13
Lohmann, Adolf—TuC13, WB18, ThB11

Mahan, A. I.—WI12
Makous, W. L.—ThH18
Malitson, I. H., and M. J. Dodge—ThC20
Malone, D. L., and M. E. Musgrove—ThH19
Mandler, Walter—WD11
Manevitz, Abraham—TuF11
Mangus, J. D.—FC16
Mann, M. M., and L. G. DeShazer—WE12
Maron, E.—FE17
Marshall, Gerald F., and Michael H. Williams—FF16
Mason, Ken—FF12
Massey, G. A., and A. E. Siegman—WD18
Matloff, Gregory L.—TuF14
Mayer, W. G.—FE19
McAlister, E. D.—TuA4
McCubbin, T. K., Jr., J. G. Panitz, and R. I. Ely—WJ20
McCullough, Andrew—ThG13
McDevitt, Howard L.—FC22
McFee, Raymond H.—TuC17
Meier, Reinhard W.—WB11
Merchant, John, and Ken Mason—FF12
Mevers, G. E., M. P. Keister, Jr., and D. L. Fried—WH18
Meyer-Arendt, Jurgen R., Willis S. Muncey, Jr., and Louis Montes—FF19
Mezrich, R. S.—WB17
Mielenz, Klaus D., and Arthur T. Funkhouser—ThF16
Miller, Douglas D.—ThH20
Miller, Norma D., Heinz A. Gaylord, and Douglas D. Miller—ThH20
Mitchell, Kevin J.—FB13
Mitchell, McLaren P.—WH21
Mogey, John—TuE17
Monohan, Michael A.—ThB21
Montes, Louis M.—FF19
Morrow, H. E.—ThC21
Mueller, Peter F.—ThD16
Mueller, R. K., and E. Marom—FE17
Muncey, Willis S., Jr.—FF19
Murcray, David G., T. G. Kyle, F. H. Murcray, and W. J. Williams—WC11
Murcray, F. H.—WC11
Murphy, R.—ThG19
Musgrove, M. E.—ThH19
Musicant, B. L., A. N. Kohn, and J. J. Schlickman—TuF15

Nagel, C. M., Jr., and J. N. Lahti—WH17
Nagelberg, E. R.—WC16
Narducci, L. M., and R. Bonifacio—FE12
Neumann, Don B., Charles F. Jacobson, and Gordon M. Brown—TuC16
Neupert, W. M.—FC16
Neuymin, H. G.—TuD13
Nivert, Lawrence J., and Gerhart J. Kneissl—FF14

Oberheuser, Joseph H.—TuE21
Ochs, Gerard R.—WH11
Ofelt, G. S., Melvin A. Pittman, and Jacob Becher—FC19
Offner, Abe—TuE14
Ohmart, James G., and Halim Ozkaptan—ThH21
O'Neill, Edward L.—TuC19
Osantowski, J. F., and A. R. Toft—ThG21
Ozkaptan, Halim—ThH21

Palumbo, L. J., and R. C. Elton—FC17
Panitz, J. G.—WJ20
Pantle, Allan J.—ThH12
Pao, Yoh-Han, and A. Einhorn—ThC18
Paramonoff, A.—TuD20
Pastor, Jose, and Andrew McCullough—ThG13
Paul, Edward, Jr., and Curtis J. Humphreys—WJ13
Paul, Fred W.—FC20
Paviasek, T. J. F., and Jacques Legendre—WI20
Pearson, A. D.—ThC15
Pearson, D. E., and C. B. Rubinstein—ThE15
Peck, R. L.—ThC11
Penn, William A., and Donald E. Duffy—WG15
Pennington, K. S., and J. S. Harper—WB13
Pernicka, John C., Susanne Hummer, and Carl E. Polhemus—WG14
Pinnow, D. A., S. R. Williamson, and J. T. LaMacchia—WG20
Pittman, Melvin A.—FC19
Plass, Gilbert N.—WC20
Plass, Gilbert N., and George W. Kattawar—WC21
Polhemus, Carl E.—WG14
Poole, E. W.—TuF17
Potter, R. M.—WJ19
Preisendorfer, R. W.—TuD18

Radziemski, L. J., Jr., K. J. Fisher, and D. W. Steinhaus—WE13
Ragent, Boris—WE18
Ragent, Boris, Benjamin S. Fraenkel, David Goorvitch, and Francisco P. J. Valero—WJ14
Ramsey, J. B.—ThC13
Raney, R. Keith—WG11
Rao, K. Narahari—WJ19
Reader, Joseph—FC11
Rennilson, J. J.—TuF12, WA1
Reynolds, George O.—ThD11
Reynolds, George O., and David J. Cronin—TuC21
Rhine, Paul E., Lloyd D. Tubbs, and Dudley Williams—WC12
Rhodes, W. T.—WC17
Richards, Whitman—ThE20, FB17
Riggs, Lorrin A.—FA1
Rimmer, M.—WD14
Robertson, A. R.—ThE11
Rope, E. L.—ThB19
Rose, Harold W.—TuC14
Rosin, Seymour, and Wright H. Scidmore—WD17
Rouillard, M.—WI19
Rouse, Prince E.—FC12
Rubinstein, C. B.—ThE15
Rusk, Alvin N., and Dudley Williams—ThC17
Russell, E. E., J. B. Young, and S. P. Anderson—FC14
Rybicki, E. B.—TuE13

Sakai, H., and R. Murphy—ThG19
Sanders, C. L.—FF18
Sanderson, Robert L., and William Streifer—FE16
Sasaki, Tadayoshi—TuD17
Schachter, H.—ThF12, FE14
Schlickman, J. J.—TuF15
Schorn, R. A.,—WJ18
Schultz, Floyd V.—WH12
Scidmore, Wright H.—WD17
Scolnik, R.—ThD21
Segre, J. P.—ThF17
Sen, A. K.—WI19
Shannon, Robert R.—TuB1
Shenstone, A. G.—WE11
Sherman, B., and J. Black—FF21
Shewell, J. R.—WB19
Shirk, J. S.—WJ17
Shoemaker, A. H.—TuE13
Siegman, A. E.—TuC22, WD18, ThF21
Silberg, P. A.—FE21
Simpson, J. M., Jr.—TuE18
Skurnick, E. D., and H. Schachter—ThF12
Slepian, D.—WD12
Smith, Howard M.—ThD20
Snitzer, E.—ThF18, ThF19
Sondhi, M. M.—WD12
Spector, Nissan—WE21
Sperling, H. G., and A. E. Jones—ThE17
Speyer, Edward—ThD15
Spyropoulos, Perry—FB11
Squyres, H. P., and J. J. Rennilson—TuF12
Stair, A. T., Jr., E. Ray Huppi, and Allen J. Steed—WC13
Stanford, J. L.—ThC12
Stanley, R. W.—WE17
Stavroudis, Orestes N.—WD15
St. Cyr, A. J.—FB16
Steed, Allen J.—WC13
Steinberg, J. D.—ThH15
Steinhaus, D. W.—WE13
Stevenson, Warren H.—FC13
Stich, K.—WC14
Stober, A. K.—ThD21
Streifer, William—WI21, FE16
Sussman, M. H., A. H. Shoemaker, and E. B. Rybicki—TuE13

Tatian, Berge—TuE15
Tatuoka, Sizuo—ThB16
Taylor, Leonard S., Norman E. Hernandez, and Robert O. Harger—WH16
Teller, Davida Y.—ThE16. ThH14
Thaler, W. J.—FE19
Thomas, James P., Frank M. Bagrash, and Larry G. Kerr—ThH13
Thompson, Brian J.—ThB21
Tibbetts, R. E.—TuE20
Tischer, Frederick J.—WG16
Toft, A. R.—ThG21
Treacy, E. B.—FE11
Tricoles, G. P.—WI15
Tricoles, G. P., and E. L. Rope—ThB19
Tubbs, Lloyd D.—WE12
Tucker, Stevens P., Richard D. Waer, and Lanny A. Yeske—TuD16
Tynes, A. R., A. D. Pearson, and D. L. Bisbee—ThC15

Underwood, J. H., J. D. Mangus, and W. M. Neupert—FC16
Upatnieks, Juris, and Carl Leonard—WB14

Valero, F. P. J.—WE18, WJ14
Varner, Jerry R.—ThB20
Vatsia, M. L., K. Stich, and D. Dunlap—WC14
Vilkomerson, D. H. R.—WB15
Vogl, Thomas P., and Abrahim Lavi—TuE19

Waer, Richard D.—TuD16
Wallace, R.—ThF18
Walter, Thomas J., and Hideya Gamo—ThG14
Walther, A.—WF1
Webb, James J.—WC15
Weigandt, A.—ThG15
Wells, M. B., D. G. Collins, and F. Hopper—WC18
Werner, A. J.—ThC19
Wessely, Harry W., and Jon O. Bolstad—TuC20
Wessely, Harry W., and McLaren P. Mitchell—WH21
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Jensen, Authrr E.—ThG18, ThG19
Johnson, R. Barry—FI12
Johnson, R. Barry, and Elmer E. Branstetter—TuH13
Johnson, Ronald E.—TuD19
Judd, Deane B., and Dorothy Nickerson—TuE22
Julesz, Bela—WC1

Kaihola, L. L.—TuD21
Kallmeyer, M.—FG11
Kandel, Gillray L., Fred W. Billmeyer, Jr., and David H. Alman—TuE14
Kashnow, R. A., J. E. Bigelow, and C. R. Stein—FB6
Kato, Hisatoyo, and J. W. Goodman—ThD13
Kaufman, Victor, and Lucy Hagan—ThI16
Kaye, Martin—WH19
Kellen, Paul—FF13
Kellen, Paul, Merlin Miller, and Arthur Schneiderman—WJ15
Kellie, T. F., and W. H. Stevenson—FE17
Kelly, Raymond L.—ThI21
Kelly, Raymond L., and Louis J. Palumbo—ThI20
Kimble, H. J., S. Chopra, and L. Mandel—WJ11
King, William B.—WG14
Kingslake, Rudolf—WD1
Kinney, Jo Ann S.—TuE13
Klein, P. B.—ThE19
Klem, Bernard F.—FF23
Kline, John V., and David W. Steinhaus—ThI11
Knox, Keith T., and Brian J. Thompson—FF12
Kogelnik, H.—WB3
Kohles, R. B.—FH16
Koot, J. A.—ThI15
Korb, C. Laurence, and John L. Engvall—TuH22
Kosanke, K.—FG11
Kozak, Wlodzimierz M., and Herbert J. Reitboeck—TuE11
Kramer, C. J.—WF15
Kramer, C. J., M. N. Araghi, P. Das, and M. Hercher—WF19
Kujawski, A.—TuG14

Land, Richard I.—TuI15
Langhoff, P. W.—FH17
Lapp, Marshall—WL1
LaRue, John C.—FF18
Latta, John N., and Ronald C. Fairchild—FE11
Lee, Sing H.—ThD15
Leppmann, Peter K., and Donald B. Allen—TuI12
Levinson, Eugene, and Robert Sekuler—WH14
Levy, R. H.—FA3
Libelo, L. F.—TuG20
Lightstone, A. D.—ThF15
Litovitz, T. A.—ThE17
Liu, Wai-Min, and Geroge L. McCrobie—TuD13
López-López, Fernando Jose—WG15
Lovell, D. J.—WH20
Lowenthal, S., and Y. Belvaux—ThA3

MacAdam, David L.—TuB4
Macedo, P. B.—ThB3
Mahan, A. I., and C. V. Bitterli—TuG19
Malacara, Daniel—ThG14
Malik, D. P., and A. K. Ghatak—WF18
Mandel, L.—ThH14, WJ11, FC20
Mandelkorn, Fred—FE12
Manor, Robert E.—WJ18, WJ19
Marchand, E. W., and E. Wolf—TuH11
Marcus, Robert T., and Fred W. Billmeyer, Jr.—TuE19
Margolis, D. P.—TuG20
Marks, L. M.—WK13
Marshall, Gerald F.—ThG23
Martin, E., and L. Mandel—FC20
Martinez, J. M. II, and J. F. Sturr—TuE24
Masui, H., P. B. Klein, J. J. Song, and R. K. Chang—ThE19
Matloff, Gregory L., and Alphonsus J. Fennelly—TuH23
Matteson, Halsey H.—ThF18
Mauer, Paul B.—FE18
May, A. D.—ThE16
McCann, John J., Robert L. Savoy, and John A. Hall, Jr.—WA17
McCrobie, George L.—TuD13
McGee, J. F., and L. L. Kaihola—TuD21
Meiron, Josef—WG13
Michels, H. J.—FG12
Mikes, T. L., D. J. Michels, and W. R. Hunter—FG12
Miles, Perry—FD1
Miller, Merlin—WJ15, FF13
Miller, Theodore L.—ThG17
Mitchell, Donald E.—ThC2
Mitchell, R. S.—ThE13
Monahan, Michael A.—ThA6
Montgomery, G. Paul—WI13
Montrose, C. J.—ThB1, ThE21
Moore, Robert, and Frank H. Slaymaker—TuD12
Moreland, J. D.—TuE15
Morey, W. W., and C. M. Penney—WI14
Moss, G. E.—FE13
Murty, M. V. R. K., and A. Cornejo—ThG12
Murty, M. V. R. K., R. P. Shukla, and A. Cornejo—ThG13

Narducci, L. M., C. M. Bowden, M. Orazag, and R. A. Tuft—WJ14
Nelson, Clarence N.—WA6
Nickerson, Dorothy—TuE16, TuE22
Nicol, Malcolm—ThB6
Nisenson, Peter—FI13
Nitchie, Francis R., Jr., and Maurice Beaulieu—ThG20
Noëns, J. C.—ThI19
Nomarski, Georges—ThD14

O'Handley, R. C., S. N. Jasperson, D. K. Burge, and E. J. Ashley—TuF12
Oinen, Donald E.—TuD17
Orlofsky, A.—WG12
Orszag, M.—WJ14
Osantowski, J. F., A. R. Toft, and R. S. Spencer—TuF14

Palumbo, Louis J.—ThI20
Palumbo, Louis J., and Raymond L. Kelly—ThI21
Pantle, Allan J.—TuE23
Parsons, D. F.—TuG12
Penney, C. M.—WI14
Peterson, R. L., G. W. Day, P. M. Gruzensky, C. A. Hamilton, and R. J. Phelan, Jr.—TuH15
Phelan, R. J., Jr.—TuH15
Phillips, Robert K.—WI11
Phillips, Robert W.—FC18
Pincus, H. J.—ThA5
Plummer, W. T.—TuA4
Porcello, Leonard J.—ThA4
Price, W. Hi, and T. H. Carter—TuA3

Quarles, Donald A., Jr.—ThF13
Querry, Marvin R.—WI11, FH15

Ramsey, J. B., Jr.—TuF13
Ransom, P. L., and R. M. Singleton—FE20
Rayces, Juan L.—ThD20
Reitboeck, Herbert J.—TuE11
Reuter, Benno W.—FE22
Rhodes, William T.—ThD21
Riggs, Lorrin A., Keith D. White, and Peter D. Eimas—TuI11
Rimmer, M. P.—ThG16
Robson, John—WC2
Roychoudhuri, C.—ThE12
Rozelot, Jean-Pierre, and J. C. Noëns—ThI19

Saito, Ted T.—TuD20
Saleh, Bahaa E. A.—ThD22
Sandercock, J. R.—ThB7
Sasser, Thurman—FC18
Savoie, Robert E., and Hewitt D. Crane—ThF19
Savoy, Robert L.—WH17
Schedewie, F., K. Kosanke, M. Kallmeyer, B. Solf, Wagner—FG11
Scheggi, A. M., P. F. Checcacci, and R. Falcini—FC19
Schmidlin, Fred W.—WA3
Schmidt-Weinmar, H. G.—ThD19
Schneider, M. V.—WF17
Schneiderman, Arthur—WJ15
Schneiderman, Arthur M., Paul F. Keilen, and Merlin Miller—FF13
Schroeder, J. M., and C. J. Montrose—ThE21
Schuda, F., and C. R. Stroud, Jr.—FA5
Seaman, William A.—WJ12
Segmüller, Armin—WB4
Seguin, M. K.—ThD17
Sekuler, Robert—WH14, WH16
Shafer, David R.—TuD16
Shahin, Michael M.—WA2
Shannon, R. R.—TuD11, FF11
Shardanand, and Shashi K. Gupta—WI12
Shealy, David L.—WG17
Shealy, David L., and Donald G. Burkhard—WG16
Shekhani, Mohammad S.—FC21
Sheridan, J. P., and T. G. Giallorenzi—WB6
Sherman, George C.—TuG18
Shukla, R. P.—ThG13
Singleton, R. M.—FE20
Slaymaker, Frank H.—TuD12
Slocum, Robert E.—TuG17
Smith, F. Dow—TuA2
Smith, Robert Allen, Jr.—WH13
Smith, Warren J.—TuA1
Snavely, B. B.—FA1
Solf, B.—FG11
Sollid, Jon E.—ThD11
Somers, William W.—ThF11
Song, J. J.—ThE19
Spector, Nissan—ThI14
Spencer, Domina Eberle, and Eugene A. Gaston—TuH19
Spencer, R. S.—TuF14
Spiller, Eberhard, and Armin Segmüller—WB4
Stamnes, Jakob J., and George C. Sherman—TuG18
Steele, G. N.—TuF11
Stein, C. R.—FB6
Steinhaus, David W.—ThI11
Stetson, K. A.—ThD11
Stevens, J. R.—ThE13
Stevenson, W. H.—FE17
Stoicheff, B. P.—ThE20
Stoudt, M. D., and K. Vedam—TuH20
Streifer, W., R. N. Goren, and L. M. Marks—WK13
Stroud, C. R., Jr.—FA5
Sturr, J. F.—TuE24
Sugar, Jack, and Nissan Spector—ThI14
Supertzi, E. P.—WF16
Susman, Alan—FB4
Swinney, Harry L., and Don Eden—ThE15

Tai, Anthony—WK12
Tajfel, M.—WH15
Tannenbaum, P. M.—FI11
Tarazano, Donald O., John H. Bradham, David B. Young, and Darryl P. Greenwood—FF16
Tatian, Berge—WG11
Tchen, Chan Mou—FF15
Tesler, M. H., and G. Eichmann—WF13
Thompson, Brian J.—ThA1, FF12
Thompson, James—TuA5
Ting, L. K. M.—TuA4
Tittel, F. K.—FA6
Toft, A. R.—TuF14
Tompkins, E. N.—WA4
Tuft, R. A.—WJ14
Turner, J. N., C. L. Andrews, and D. F. Parsons—TuG19
Tynan, Paul, and Robert Sekuler—WH16

Ulrich, Reinhard—WB2
Urani, John R., Robert K. Phillips, and Marvin R. Querry—WI19

Vander Lugt, A.—ThA2
Van Deurzen, C. H. H., John G. Conway, and Summer P. Davis—ThI18
van Kleef, Th. A. M., and J. J. A. Koot—ThI15
Vedam, K.—TuH20
Vergès, J.—ThI12

Wagner, D.—FG11
Wagner, R. W., and R. R. Shannon—TuD11
Ward, J. E., F. P. Carlson, and J. D. Heywood—ThD19
Warner, J.—WF14
Watts, R. K., and W. C. Holton—FC16
Weber, H. P., and H. Kogelnik—WB3
Wedding, Brent—TuE25
Weeks, R. F., W. T. Plummer, L. K. M. Ting, and N. Tsui—TuA4
Weiss, Joel A., and Lawrence S. Goldberg—FC14
Werner, Alan J., and Brent Wedding—TuE25
Wertheimer, Alan, and M. Parker Givens—ThD16
White, Keith D.—TuI11
Whitney, Cynthia—FF20
Wiggins, T. A., and D. M. Cordray—TuF17
Wolf, E.—TuH11
Wolfe, William L.—TuH12, TuH18
Woodson, Robert A.—ThG22
Wyant, James C.—ThG15
Wyart, J. F.—ThI12
Wyszecki, Gunter—TuE17

Youmans, David B.—FF16
Yu, F. T. S., and Anthony Tai—WK12

Zalubas, R.—ThI12
Zalubas, Romuald, and Charles H. Corliss—ThI13
Zeidler, J. R., R. B. Kohles, and N. M. Bashara—FH17
Zory, Peter—WB1